

Application Number 10/693,005
Response to Final Office Action mailed December 6, 2006

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REMARKS

This Response is responsive to the Final Office Action dated December 6, 2006. Claims 1-12, 14-21 and 32 are pending.

Summary of Examiner Interview

On February 2, 2007, Applicant's attorneys of record, Steven J. Shumaker and Jessica H. Kwak, conducted a telephone interview with Examiner Flory. Applicant's representatives discussed the language and limitations of claim 1. For example, "the finite period of time" recited in claim 1 was discussed, and the Applicant's representatives noted that this requirement refers to a finite time period spent seeking a communication session rather than a finite communication session. Additionally, the interview participants discussed the controller that deactivates "the infrared interface after the finite period of time if the infrared communication session is not established," and the Applicant's representatives explained their position that Meadows et al. (US 6,516,227, herein referred to as Meadows), which the final Office Action found to anticipate claim 1 under 35 U.S.C. § 102(e), does not disclose or suggest this requirement.

Claim Rejection Under 35 U.S.C. § 102(e)

In the Final Office Action, the Examiner rejected claims 1-10, 17, 19-21, and 32 under 35 U.S.C. § 102(e) as being anticipated by Meadows (US 6,516,227). Applicant respectfully traverses the rejection. Meadows fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. § 102(e), and provides no teaching that would have suggested the desirability of modification to include such features. Applicant reserves the right to argue or present evidence regarding the relative priority of invention between the subject matter of these claims and the Meadows patent.

Meadows fails to disclose or suggest a medical device programmer comprising an infrared interface to receive changes to software executed by a processor within the programmer during an infrared communication session, and a controller to activate the infrared interface to seek an infrared communication session for a finite period of time in response to power-up of the

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programmer, and deactivate the infrared interface after the finite period of time if the infrared communication session is not established, as recited by Applicant's independent claim 1.

As one example, Meadows fails to disclose or suggest a controller that deactivates the infrared interface after the finite period of time *if the infrared communication session is not established*. The Examiner stated that "since Meadows discloses multiple subsequent communication sessions, it is indeed inherent that not only is the duration of each session finite, but the duration of time between communications (i.e. the seeking period) is finite."¹ The Examiner also stated that Meadows teaches that the handheld programmer is automatically turned off after a designated duration of "disuse" and characterized the automatic turning off of the handheld programmer as the end of a finite session.²

As an initial matter, Applicant disagrees with the Examiner's characterization of the duration of time between each telecommunicative link as a finite period of time for seeking an infrared communication session. Consistent with Applicant's disclosure, the claims require that seeking an infrared communication session is limited by a finite period of time. For example, Applicant's disclosure, at paragraph [0026], states that "the infrared interface enters a programming state, i.e., a limited listening period, in which it is capable of establishing an infrared communication session for field updates and upgrades to the embedded operating system."

The finite period of time set forth in claim 1 does not refer to the period of time between communication sessions, but rather the seeking of a communication session upon activation of the infrared interface in response to power-up. Even if multiple communication sessions are established in the Meadows system, the time between each of the sessions is not the pertinent issue. Again, the finite length limitation in claim 1 pertains to the limited listening period during which the infrared interface seeks a communication session.

Similarly, Applicant also clarifies for the record that the issue is not whether Meadows teaches a controller that automatically ends a finite infrared communication session or whether Meadows teaches a finite communication session, but whether the controller deactivates the infrared interface after a finite period of time *if the infrared communication session is not*

¹ Office Action dated 12/6/06, page 10.

² *Id.* at page 3.

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established. Again, the finite period of time does not pertain to the duration of the communication session or the period of time between communication sessions, but the limited listening period during which the infrared interface seeks a communication session. The Examiner reasoned that Meadows teaches a controller that deactivates the infrared interface after a finite period of time if the infrared communication session is not established because Meadows describes automatically powering off the handheld programmer after a period of "disuse," which "constitutes the terminus of a finite infrared session."³ However, Meadows describes powering off the handheld programmer after a period of disuse regardless of whether or not a communication session is established. Accordingly, Meadows fails to teach or even suggest the limitation in claim 1 that the infrared interface is deactivated after a finite period of time if the infrared communication session is not established.

With respect to the time periods between communication sessions, which the Examiner has characterized as seeking periods⁴, each of these time periods is terminated when a communication session is established, rather than if the communication session is *not* established. In fact, because Meadows teaches a system in which the handheld programmer and clinician's programmer, which communicate via infrared interfaces, are always properly synchronized⁵, an infrared communication session is likely sought until the communication session is established. Accordingly, Meadows does not suggest each and every limitation of Applicant's claim 1, which recites a controller to deactivate the infrared interface after the finite period of time if the infrared communication session is *not* established.

Meadows lacks any disclosure that suggests a controller that seeks a communication session in between communication sessions, as the Office Action suggests. Furthermore, even if, for the purposes of argument only, the programmer in Meadows seeks an infrared communication session between each communication session, nothing in Meadows discloses or even suggests how long the programmer attempts to seek the infrared communication session. Claim 1 requires that the infrared communication session is sought for a finite period of time.

Meadows describes a handheld programmer that initiates an infrared communication session in response to the connection of the clinician's programmer to the implant system and the

³ *Id.*

⁴ *Id.* at pages 10-11.

⁵ Meadows at column 17, lines 61-65 and column 36, lines 24-28.

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initiation of programming events, rather than in between communication sessions as the Office Action contends. As Meadows describes, a computer containing programming software may be connected to the handheld programmer through an IrDA compatible infrared serial port using an infrared cable extension.⁶ Upon connection of the clinician's programmer to the implant system, hardware recognition is initiated.⁷ Additionally, a telecommunicative link is established between the implantable pulse generator and handheld programmer each time a stimulus parameter is changed or a charging operation is initiated, and the handheld programmer and clinician's programmer are always synchronized so that changes from one are reflected in the other.⁸ Meadows discloses establishing a communication link in response to the initiation of programming events and the connection of the clinician's programmer to the implant system and lacks any disclosure that suggests seeking a communication session at any other time, such as in between communication sessions.

In support of the rejection of claim 1, the Examiner stated that it is inherent that an infrared communication session is initiated upon power-up of the handheld programmer in order for the handheld programmer and clinician's programmer to always be appropriately synchronized.⁹ However, as discussed previously in this Response, Meadows describes a handheld programmer that initiates an infrared communication session in response to the connection of the clinician's programmer to the implant system and the initiation of programming events, rather than in response to power-up of the handheld programmer. In Meadows, a communication session is not initiated *in response to power-up of a programmer*. Instead, a communication session is initiated in response to the connection of the clinician's programmer to the implant system and the initiation of programming events.

The Examiner also stated that interrogation of the implantable pulse generator (IPG) in response to the activation of the hidden physician screen included on the handheld programmer constitutes seeking an infrared communication session for a finite period of time in response to power-up of the programmer.¹⁰ However, activation of the physician screen does not amount to a power-up of the programmer, as the Office Action contends. Meadows discloses that access to

⁶ *Id.* at column 31, lines 41-43.

⁷ *Id.* at column 32, lines 35-39.

⁸ *Id.* at column 17, lines 61-65 and column 36, lines 24-28.

⁹ Office Action dated 12/6/06, page 4.

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the hidden physician screen is made available through a specified coded button combination. The example Meadows provides is "pressing the IPG button 242 and the up/down buttons 244 and 245 simultaneously, followed by pressing a set sequence of the other buttons, e.g., pressing the SEL button 243 once, followed by the pressing the down button 245 twice."¹¹ In fact, Meadows specifically teaches that its handheld programmer is powered-on by simply pressing any button, not by activating a physician screen.¹² The physician screen is activated (and hence the subsequent interrogation of the implantable pulse generator occurs) only after a specified combination of buttons are pressed. Furthermore, it is unclear how interrogation of the implantable pulse generator via radio frequency telemetry¹³ relates to seeking an infrared communication session. In view of the foregoing shortcomings of Meadows, Applicant respectfully submits that Meadows fails to anticipate each and every element of claim 1.

The Meadows reference simply makes no mention of a controller to activate the infrared interface to seek an infrared communication session for a finite period of time in response to power-up of the programmer and deactivate the infrared interface after the finite period of time if the infrared communication session is not established, as recited by Applicant's independent claim 1. In view of the differences identified above, Meadows does not teach each and every element of claim 1. Therefore, Applicant respectfully requests that the rejection of claims 1-7, 10, 17, 19-21, and 32 under 35 U.S.C. § 102(e) be withdrawn.

Meadows also fails to disclose or suggest various features set forth in the dependent claims. As one example, with respect to claim 3, Meadows does not describe software changes comprising changes to an operating system of the programmer. The Examiner cited columns 16-17, lines 60-13 of Meadows as teaching this limitation. However, this passage refers to operating program data sent to the implantable pulse generator rather than the programmer. Accordingly, Meadows fails to disclose or suggest software changes comprising changes to an operating system of the *programmer*.

In summary, Meadows fails to disclose each and every limitation set forth in independent claim 1. Claims 2-10, 17, 19-21, and 32 are dependent upon claim 1 and are also in condition for

¹⁰ *Id.* at page 11.

¹¹ Meadows, column 38, lines 22-32.

¹² *Id.* at column 26, lines 51-52.

¹³ *Id.* at column 23, lines 48-50.

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allowance. For at least these reasons, the Office Action failed to establish a prima facie case of anticipation of Applicant's claims 1-10, 17, 19-21, and 32 under 35 U.S.C. § 102(e). Withdrawal of this rejection is requested.

Claim Rejection Under 35 U.S.C. § 103(a)

In the Final Office Action, the Examiner rejected claims 11, 12, 14, 15 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Meadows. Claim 16 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Meadows in view of Stanton et al. (US 6,249,703, herein referred to as Stanton). In the Response to Arguments, the Examiner also referred to Lee et al. (U.S. 6,614,664) in the rejection of claims 11, 12, and 14, and Causey et al. (U.S. 2002/0002326), and Malek (U.S. 2003/0177031) in the rejection of claim 15. Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Applicant's claim 11 describes a first circuit board within the programmer housing, the first circuit board including telemetry circuitry, wherein the telemetry circuit is coupled to an antenna and a second circuit board within the programmer housing, the second circuit board including a display and display circuitry.

In support of the rejection of claim 11, the Examiner stated that it would have been an obvious matter of design choice to modify the Meadows system with two circuit boards to simplify manufacturing or reduce the size of the device. The Examiner also reasoned that since many cell phones incorporate a folding, two circuit board design that leaves a footprint half the size of an unfolded, one circuit board design, the two circuit board configuration would have been an obvious design choice to one of ordinary skill in the art. Applicant respectfully disagrees with the Examiner's conclusions of obviousness.

Applicant's claim 11 recites a first circuit board including telemetry circuitry and a second circuit board including a display and display circuitry. The Examiner has failed to address these requirements, and none of the cited references disclose or suggest such a configuration. As disclosed by the Applicant, the separation distance between the circuit boards may serve to reduce the effects of electrical and electromagnetic interference caused by the

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display on signals transmitted and received by the internal antenna. In addition, the placement of the antenna and display electronics on different circuit boards may reduce electrical and electromagnetic interference.¹⁴

Claims 12 and 14 are dependent on claim 11 and are also in condition for allowance.

Claim 15 recites an internal antenna defining an aperture and a battery bay extending at least partially into the aperture. The Examiner stated that it would have been an obvious matter of design choice to one of ordinary skill in the art to modify the system as taught by Meadows by extending the battery bay into the antenna aperture. The Examiner referred to FIG. 25 of Causey and FIGS. 1A and 1B of Malek as teaching this limitation.¹⁵ Causey's FIG. 25 illustrates computer 1006 in communication with communication station 1008, infusion device 1010, and RF programmer 1012. FIG. 25 of Causey does not illustrate an internal antenna or a battery bay and certainly does not show a battery bay extending at least partially into an aperture defined by an internal antenna. FIGS. 1A and 1B of Malek also fail to show the claim limitations. Malek illustrates clinician's programmer 102 including remote telemetry unit 240. Remote telemetry unit 240 fits into an aperture on the dorsal side of clinician's programmer 102 and generally includes a telemetry coil, receiver, transmitter, and telemetry processor. FIGS. 1A and 1B of Malek do not illustrate an internal antenna or a battery bay. The cited figures do not illustrate the limitations of claim 15 and, therefore, fail to disclose or suggest each and every element of claim 15.

With respect to the rejection of claim 15, the Examiner reasoned that in the Meadows reference, "the aperture as claimed could be defined as the housing of HHP 202, of which the battery bay is an inherently integral and internal part."¹⁶ However, Applicant's claim 15 recites *an internal antenna defining an aperture*, rather than a housing defining an aperture. The housing of handheld programmer 202 in Meadows in no way amounts to an aperture defined by an internal antenna. The Examiner's characterization of the housing of the Meadows handheld programmer as an aperture fails to consider each and every limitation of Applicant's claim 15.

Additionally, the Examiner stated that Applicant has not disclosed that positioning the batteries inside the aperture defined by the internal antenna provides an advantage, is used for a

¹⁴ Applicant's disclosure, paragraph [0120].

¹⁵ Office Action dated 12/6/06, page 12.

¹⁶ *Id.* at page 8.

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particular purpose, or solves a stated problem. Even if it were pertinent to the issue of obviousness, which Applicant disputes, it appears that the Examiner may have overlooked paragraph 100 of Applicant's disclosure, which states positioning of a battery bay to extend at least partially into an aperture defined by the internal antenna can reduce external magnetic interference to the internal antenna by providing an RF load to the internal antenna, enhancing noise immunity.¹⁷

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 11, 12, 14-16, and 18 under 35 U.S.C. § 103(a). Withdrawal of this rejection is requested.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims.

In view of the clear distinctions identified above between the current claims and the applied prior art, Applicant reserves further comment at this time regarding any other features of the independent or dependent claims. However, Applicant does not necessarily admit or acquiesce in any of the rejections or the Examiner's interpretations of the applied references. Applicant reserves the right to present additional arguments with respect to any of the independent or dependent claims.

¹⁷ Applicant's disclosure at paragraph [0100].

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Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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March 6, 2007

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